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Impact Analysis of Angrau Mega Rice Varietal Display Melas

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Acharya N. G. Ranga Agricultural University (ANGRAU) has been serving and catering to the needs of the farmers of Andhra Pradesh State and the country. It has the credit of developing 129 rice varieties, including 30 pure line selections in the pre-green revolution era and 97 high yielding rice varieties and two hybrids by different rice research stations located at Maruteru, Nellore, Bapatla, Ragolu, Nandyal, Machilipatnam, Utukur, Jangamaheswarapuram and Anakapalle. The varieties, namely, Swarna (MTU 7029), Samba Mahsuri (BPT 5204), Cottondora Sannalu (MTU 1010) and Vijetha (MTU 1001) apart from other popular varieties like Sri Dhruthi (MTU 1121), Indra (MTU 1061), Amara (MTU 1064), Tarangini (MTU 1156) and Chandra (MTU 1153) occupy approximately 95 per cent of rice area in the state and 20 per cent of the nation's rice area. ANGRAU rice varieties also account for about 17.6 per cent of the total Rice Breeder Seed indent of the country. Among these, MTU 1010 (164.60Q) and MTU 7029 (130.80Q) record, GOI indent for more than 100Q, while, BPT 5204 (42.80Q), MTU 1001 (55.30Q), MTU 1153 (94.50Q) and MTU 1121 (32.85Q) varieties record an indent of more than 30Q from different states of the country. Bihar, Chattisgarh, Karnataka, Madhya Pradesh, Maharashtra, Telengana, Tamil Nadu, Uttar Pradesh, Uttarakhandh, Tripura and West Bengal are the major states growing ANGRAU rice varieties on a large scale. Chattisgargh state alone indented for 100Q of MTU 1010, 78Q of MTU 7029, 50Q of MTU 1153 and 40Q of MTU 1001 in 2021. Significant quantities of MTU 1010 were also indented by Maharashtra (17.60Q), Telengana (36Q) and West Bengal (5Q) states. Similarly, MTU 7029 was indented largely by Bihar (10Q) and West Bengal (22Q); while MTU 1153 was indented mostly by Madhya Pradesh (11.30Q) and National Seed Association of India (22.95Q); and BPT 5204, mostly from Telengana (22Q) and Uttar Pradesh (10Q).

In this context, Mega Rice Varietal Display of the popular ANGRAU Rice varieties released from different rice research centres of the state was planned and organized at Maruteru, the lead rice research centre located in typical deltaic soils of West Godavari district of Andhra Pradesh, considered to be the Rice Bowl of the state of Andhra Pradesh and the country on 08.04.21 and 07.04.22 with the objective of exhibiting 50 popular rice varieties of different duration, grain type, biotic and abiotic resistance to various stake holders of the seed industry for their popularization and spread across the country, based on the local preferences and requirements towards boosting of the paddy yields through the sale and distribution of the seed by the Public and Private Sector companies across the country under Public Private Partnership Mode, since ANGRAU alone would be unable to meet the huge demand for its varieties across the nation.

A total of 171 and 172 Private and Public Sector Seed Companies, respectively, had participated in the Mega Event during 2021and 2022 from various parts of Andhra Pradesh, Telengana, Tamil Nadu, Karnataka, Maharashtra, Odisha, Chattisgarh and Uttar Pradesh, in addition to representatives of Professor Jayashankar Telengana State Agricultural University, Telengana; International Rice Research Institute, South Asia Hub, Hyderabad; Indira Gandhi Krishi Vishwa Vidyalaya, Raipur; Indian Institue of Rice Research, Hyderabad; and National Rice Research Institute, Cuttack. The total number of participants registered for the event during 2021 and 2022 were 224 and 249, respectively. The number of Public and Private Sector companies that

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participated during both the years is 48 from the states of Andhra Pradesh (11 Nos.), Telengana (28 Nos.), Maharashtra (3 Nos.), Odisha (3 Nos.) and West Bengal (3 Nos.).

Impact of the Mega Event on Breeder Seed Indents is illustrated in Tables 1-3 and Fig.1.

Table 1. Impact of Mega Rice Varietal Display on GOI Breeder Seed Indents

S.No.	Variety	Indents (Q)		Increase (Q)
		2020	2021	
1	MTU 1140	a	11.1	1.1
2	MTU 1153	31.8	86.9	55.1
3	MTU 1190	0.0	1.5	1.5
4	MTU 1210	3.6	9.0	5.4
5	MTU 1223	0.0	17.8	17.8
6	MTU 1224	0.0	8.5	8.5
7	MTU 1239	0.0	16.7	16.7
8	MTU 1262	0.0	7.5	7.5
9	RGL 2537	0.0	9.0	9.0
10	NLR 3354	0.0	1.0	1.0
	Total	**45.4**	**169.0**	**123.6**

The rice breeder seed indents from Government Of India (GOI) during 2021 had increased in respect of eight varieties from Maruteru (MTU 1140, MTU 1153, MTU 1190, MTU 1210, MTU 1223, MTU 1224, MTU 1239 and MTU 1262) and one variety each from Ragolu (RGL 2537) and Nellore (NLR 3354). The total increase in Breeder Seed Indent received after Mega Rice Varietal Display during 2021 was 123.6Q higher than the indent placed during 2020 with respect to the above ANGRAU rice varieties. Maximum increase (55.1Q) was observed for MTU 1153 (Chandra) rice variety.

A 54 per cent increase in the indents received from Seed Men Association (SMA) during 2021 (720.5Q) was also observed, in comparision to the indents received during 2020 (467.2Q), in respect of two Bapatla rice varieties (BPT 2231 and BPT 2782); 13 Maruteru rice varieties (MTU 1001, MTU 1006, MTU 1010, MTU 1061, MTU 1064, MTU 1121, MTU 1140, MTU 1153, MTU 1156, MTU 1224, MTU 2077, MTU 3626 and MTU 7029) and one each from Pulla (PLA 1100), Nandyal (NDLR 7) and Nellore (NLR 4001) as depicted in Table 2 due to the positive impact of the Mega Rice Varietal Display organized during April 2021. Maximum increase of 65.8Q was observed for MTU 7029, followed by 54.6Q for MTU 1010 and 31.3Q for MTU 1156.

Table 2. Impact of Mega Rice Varietal Display on Seed Men Association Breeder Seed Indents

S.No.	Variety	Indents (Q)		Increase (Q)
		2020	2021	
1	BPT 2231	2.9	4.3	1.4
2	BPT 2782	0.0	1.2	1.2
3	MTU 1001	29.6	42.4	12.8

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4	MTU 1006	0.0	0.3	0.3
5	MTU 1010	84.2	138.8	54.6
6	MTU 1061	43.3	56.8	13.5
7	MTU 1064	17.3	37.0	19.7
8	MTU 1121	54.0	55.4	1.4
9	MTU 1140	1.1	5.1	4.0
10	MTU 1153	66.7	76.9	10.2
11	MTU 1156	67.9	99.2	31.3
12	MTU 1224	5.4	15.0	9.6
13	MTU 2077	0.4	3.9	1.5
14	MTU 3626	10.8	14.7	3.9
15	MTU 7029	58.7	124.5	65.8
16	PLA 1100	13.0	28.4	15.4
17	NDLR 7	9.8	14.3	4.5
18	NLR 4001	2.2	2.6	0.4
	Total	**467.2**	**720.5**	**253.3**

Impact of the Mega Rice Varietal Display held during April 2021 was most evident on the indent from the Private Firms for the Breeder Seed of ANGRAU Rice Varieties. The indents from Private Firms had shot upto an exorbitant quantity of 1142.2Q during 2021, in comparision to a meager 196Q during 2020, in respect of six Bapatla rice varieties (BPT 2231, BPT 2270, BPT 2595, BPT 2782, BPT 3291 and BPT 5204); 20 rice varieties from Maruteru (MTU 1001, MTU 1006, MTU 1010, MTU 1061, MTU 1064, MTU 1075, MTU 1121, MTU 1140, MTU 1153, MTU 1156, MTU 1172, MTU 1190, MTU 1210, MTU 1223, MTU 1224, MTU 1239, MTU 1262, MTU 2077, MTU 3626 and MTU 7029); four Nellore rice varieties (NLR 145, NLR 30491, NLR 33892 and NLR 34449); two from Nandyal (NDLR 7 and NDLR 8); and one each from Pulla (PLA 1100) and Ragolu (RGL 2537) as presented in Table 3. Maximum increase was noticed in respect of MTU 7029 (162.8Q), followed by BPT 5204 (114Q), NDLR 7 (53.7Q), MTU 1153 (50.3Q), NLR 34449 (48.9Q), BPT 2782 (47.7Q), MTU 1156 (47.4Q) and BPT 2231 (44Q).

Table 3. Impact of Mega Rice Varietal Display on Private Firms Breeder Seed Indents

S.No.	Variety	Indents (Q)		Increase (Q)
		2020	2021	
1	BPT 2231	1.7	45.7	44.0
2	BPT 2270	2.9	19.2	16.3
3	BPT 2595	0.0	15.0	15.0
4	BPT 2782	1.1	48.8	47.7
5	BPT 3291	0.0	4.9	4.9
6	BPT 5204	22.5	136.5	114
7	MTU 1001	7.0	27.5	20.5
8	MTU 1006	0.0	1.0	1.0
9	MTU 1010	7.6	96.6	89
10	MTU 1061	15.0	37.0	22

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11	MTU 1064	9.8	17.5	7.7
12	MTU 1075	9.0	13.8	4.8
13	MTU 1121	14.6	51.8	37.2
14	MTU 1140	1.8	13.8	12.0
15	MTU 1153	11.0	61.3	50.3
16	MTU 1156	20.0	67.4	47.4
17	MTU 1172	0.4	3.3	2.9
18	MTU 1190	0.4	0.5	0.1
19	MTU 1210	0.0	6.0	6.0
20	MTU 1223	0.0	12.2	12.2
21	MTU 1224	3.6	36.6	33.0
22	MTU 1239	0.0	8.3	8.3
23	MTU 1262	0.0	32.3	32.3
24	MTU 2077	0.9	1.1	0.2
25	MTU 3626	0.7	5.3	4.6
26	MTU 7029	32.0	194.8	162.8
27	NLR 145	4.3	13.5	9.2
28	NLR 30491	2.2	4.7	2.5
29	NLR 33892	4.3	6.0	1.7
30	NLR 34449	10.8	59.7	48.9
31	NDLR 7	0.0	53.7	53.7
32	NDLR 8	0.0	0.5	0.5
33	PLA 1100	12.5	21.6	9.1
34	RGL 2537	0.0	25.0	25.0
	Total	**196.0**	**1142.2**	**946.2**

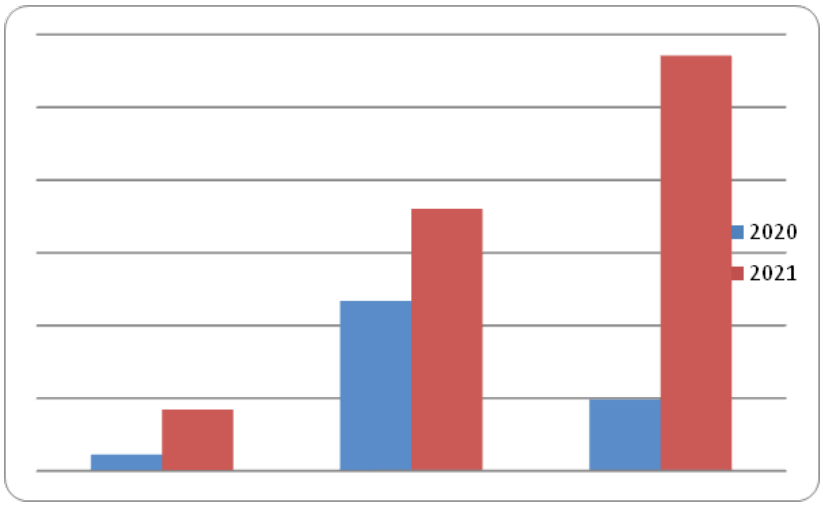

Fig. 1. Impact of Mega Rice Varietal Display on Breeder Seed Indents of Government of India (GOI), Seed Men Association (SMA) and Private Firms

An analysis of feedback obtained from the participants is presented in Table 4 and Fig. 2. 85 and 79 per cent of the participants in the Mega Event during 2021 and 2022, respectively had expressed their satisfaction with the conduct of Mega Event during 2021 and 2022 and rated conduct of the event as very good. Further, 94.1

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and 70.7 per cent of the participants during 2021 and 2022 had expressed their interest in collaboration and working together with ANGRAU as a team for the benefit and uplift of the farmer. 85.3 and 94.8 per cent of the participants of 2021 and 2022, respectively had expressed their interest in participation in such events organized by ANGRAU in the future also.

S.No.	Feedback	2021			2022		
		Positive response	Total response	Per cent positive	Positive response	Total response	Per cent positive
1	Very good conduct of the event	29	34	85.3	46	58	79.3
2	Interested in Collaborations with ANGRAU	32	34	94.1	41	58	70.7
3	Interested in participation in future events	29	34	85.3	55	58	94.8

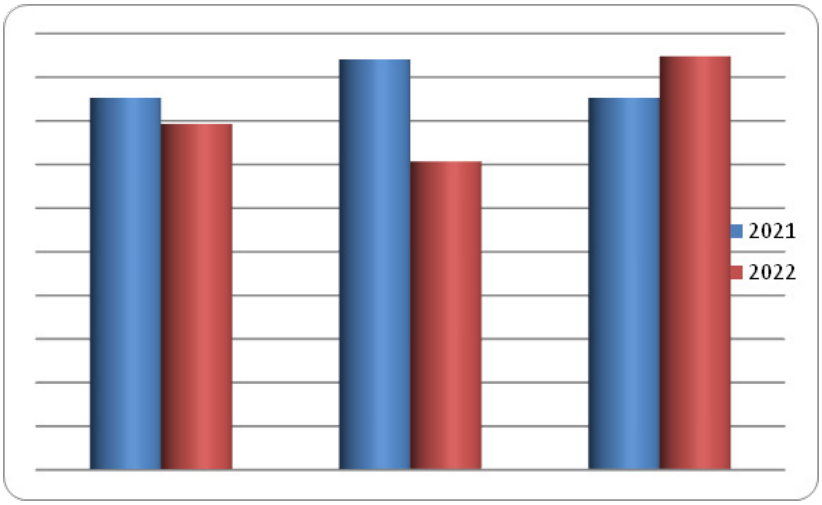

Fig. 2. Feedback analysis of the participants in the Mega Rice Varietal Display

Conclusion:

It is therefore concluded that such Mega Display Events have a significant impact in popularization of the State Agricultural University (SAU) bred Varieties and increasing the breeder seed indents of the State Agricultural Universities, thereby increasing the revenue of SAU's in addition to providing an excellent opportunity for increased collaborations with the Public and Private Sector Companies under the Public-Private Partnership Mode and help in furthering need based research aimed at target mode development of products suited to the specific needs of farmers, consumers and other stake holders.